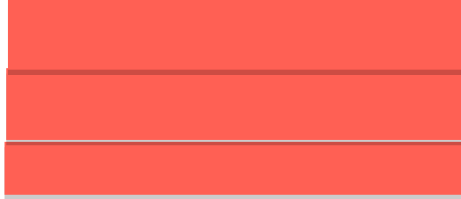


Complexed Systems And Forced Random Design

Peter Carlsson



ABSTRACT

In this paper we'll discuss what a "Complex System" is, and how it provoke a hypothesis i like to call "forced random design".

General Terms

Donald Norman: The Design of Everyday Things:

- Visibility
- Feedback
- Constraints
- Mapping
- Consistency
- Affordances

Complex Systems: Something difficult to design/understand/visualize etc. Something built by allot of components. Has a complexed nature. There are allot of theories defining complexity for ex: ontological and epistemological.

Software Factory: An old method for setting up collaboration environments throughout an organization. In this case strictly to make program code in clusters. The infrastructure here is defined as a complex system.

1.INTRODUCTION

Complex systems tend to force a random design, to understand a system we usually draw conclusions of how it works from our experience. For example the weather, we understand it and we have adapted to it in our ways. But it's hard to model it and fully understand it. We can only grasp parts of it.

Simon (1976) writes: "Simplicity, of course, is a matter of degree. The atmospheric system surrounding our Earth is sufficiently complex that, modeling it with our largest computers, we are still able to predict only the grossest features of our weather, and barely i n real time, at that."

2.CHANGES IN DESIGNS

2,1.My Profession

Mostly I see old people in offices that been there for decades and doing work no other freshman can do. Still these people have to adapt to new technology. This tend to cause random design in the workplace. It's not just interaction design it's also work flow. Complex systems can also explain that a group of people understand it, but another group doesn't. The understanding for "Internet" is one example. Many old people today thinks it's some kind of advanced TV. People in use of these systems tend to tweak it to get their system "back", and the role of a system

developer is to make a better visibility so the user understand what they are part of. Still the consistency from the earlier days needs to be an option. The other designing rules comes often natural, the feedback and mapping should always be something that speak to them personally, ex when users had Windows 3.11's sound schemes. They must feel "at home". Ex most people can grasp how a network works, but today interaction design like web-applications confuse allot of old users, because the applications look like they are running native on their machine. But with better constraints and visibility like different color schemes and sound can make them understand better.

2,2.Design

Mostly forced random design depends on the user, a frequent computer user or not, which decade etc? Forced Random design can also be a heavy constraint design. Ex when logging on to a client machine using Windows 98 with only 2 icons visible on the desktop, the color scheme is "Ketchup and Mustered". This warns the user from starting to work like usual because the environment is all wrong. The first icon says "Remote Connection" the other one says "Log Off". Naturally this person wants to work so he/she will chose the first one. Viola the process of a random constraint design proves it self to provoke the user to do what "I" want. The next step goes to the server with a finished profile , the user is "home" and can work as usual. So why all this fuss? Well, the person from say the 70:ths is now not only using a up to date system, he or she still have some of their natural work flow process they had before.

2,3.Case Studies

As mentioned before similar initiatives like the "Software Factory" model Ciborra (1994) shows the same behavior in people that are in frequent computer work. Like programmers. Programmers tend to "tweak" everything to get what they want. This often result to "Forced Random Design", why? It's not laziness, it's not anarchy, it just simply speeds things up. The initiative is a positive one but only for some individuals in the company. This could be explained by Simon (1962) as how complex or simple a structure is, depends critically upon which way we describe it. To use the "system" we need to find the right representation. The designers job is mostly to simplify the complex system for the users to easily interact with it. Cross (1995) says that the main definition of design capability is constructive intentional intelligence. A definition like that points out two main properties; A designer should be constructive in the sense of of being creative and innovative, yet intentional so that they are aware of making changes in the world.

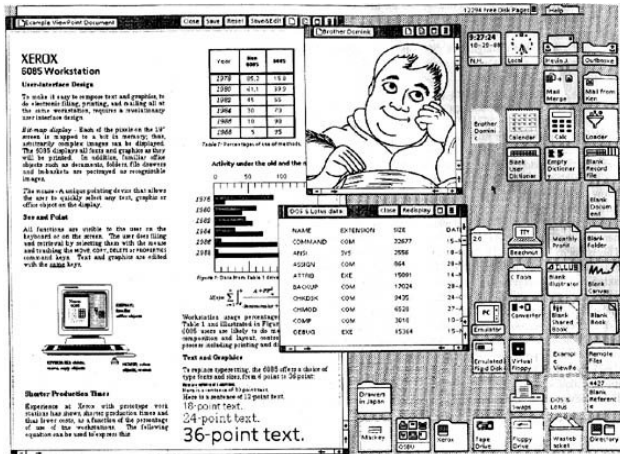


Figure 1. Xerox Star -1981, Looks familiar? This is still a complex system, having the right GUI to interact with a computer. The design showed in this figure is still used on most Operating Systems.

3.CONCLUSION

There are countless rules and scenarios about good and wrong design. "Forced Random Design" just tends to make it self more visible in system development and supporting. When I refer to complex systems, it's the notion of the users way of understanding it, the usability itself have a need to have a good design for the user to interact with it. The design should be based on each and every user and force them to adapt new technology in their own way (if the complex system is a IT-based one). Forced Design or not the user will eventually adapt to it's own needs, pending on the situation/scenario of course. In the Software Factory case it was all about the workload/workflow pending on their salary, so in that case users adapt to complex systems in one way. But if we talk about understanding complex systems like say "nature/life" we try to adapt to the way it works, we "Force Design" to interact with it. These two examples are "money or wealth", and "living or survive". Very different but also very similar, the differ is "choice".



Figure 2. The Chameleon, Some chameleon species are able to change their skin color. Changing color is an expression of the physical and physiological condition of the lizard. The color also plays a part in communication. How long do you think it took this animal to adapt do a complex system called; Nature?

4.REFERENCE

- [1] Ciborra CU, Lanzara GF, Formative Contexts And Information Technology: Understanding the Dynamics Of Innovation In Organizations, Acting Mgmt & Info Tech, Vol. 4, No. 2, 1994
- [2] Donald Norman: The Design of Everyday Things (1988)
- [3] Herbert A. Simon, How Complex are Complex Systems? PSA: Proceedings of the Biennial Meeting of the Philosophy of Science Association, Volume Two: Symposia and Invited Papers. (1976)
- [4] Herbert A. Simon, The architecture of complexity, Proceedings of the American Philosophical Society (1962)
- [5] Cross N. Discovering design ability, The University of Chicago Press (1995)